



## Paducah Citizens Advisory Board

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### **Recommendation 15-01: Construction of an On-site Waste Disposal facility at the Paducah Gaseous Diffusion Plant site.**

Draft: Revision 3, dated 11/20 /14

#### **Background**

Studies relating to disposal of the immense volume of material that must be disposed of during the cleanup and preparation for reuse of the Paducah Gaseous Diffusion Plant (PGDP) site have been conducted for at least the past decade. Now, with the closure of the PGDP, coupled with the recent award by the Department of Energy (DOE) of a contract to begin preliminary work towards site restoration, the need to reach a decision on the best alternative for disposition of the large volume of waste that will be generated over the next 20 years while this restoration is proceeding requires prompt resolution. For reference purposes, the size of a waste facility capable of handling the material generated by the cleanup is estimated by DOE to be in the order of 8 million cubic yards, equivalent to filling three football fields to a height of six to eleven stories.

Extensive studies undertaken by DOE have included an analysis of various disposal alternatives (on-site versus off-site) and more detailed studies of various specific waste disposal locations on the property, should this option be approved. The Citizens Advisory Board (CAB) has spent hundreds of hours in reviewing these studies, and in addition has utilized the services of other technical experts, including the University of Kentucky and the United States Geological Service. In addition, CAB members have made on-site visits to several other waste storage sites at DOE installations. Public meetings held in Paducah have solicited input on these decisions from the community. More recently, four extensive review sessions, summarizing information gained to date, have been held for the CAB. Finally, it should be noted that all decisions relative to waste disposal are being conducted under the CERCLA process, with joint approval required between DOE, the Kentucky Department for Environmental Protection, and the U.S. Environmental Protection Agency.

Based upon these reviews, the CAB has developed a set of Core Values that should be applied in the decision making process:

#### **Core Values**

- Health and safety is paramount both to the general population and to the workers engaged in cleanup and remediation.
- Waste disposal operations should be designed such that they minimize the impact to prompt and expedient cleanup operations, in order that a stable workload that is capable of retaining an experienced and well trained workforce is in place during the entire cleanup cycle, which may last for as long as 20 years. The CAB considers that maintenance of this stable workforce is the most important single safety issue to be addressed in the cleanup work plan.
- Should an on-site disposal option be chosen, only waste generated at the Paducah Site will be disposed of in the on-site waste disposal facility.
- In the event that on-site waste disposition is selected, DOE must demonstrate the ability to design and construct a cell that is protective of human health and the environment and respective of the geophysical conditions present at the Paducah Site.

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- Regardless of the waste disposition alternative selected, high-level, transuranic, and spent nuclear fuels (as defined in DOE Order 435.1) are not expected to be generated and are not included in the estimated waste volume.
- If the on-site storage option is selected, all wastes that are selected for disposal on-site must meet a series of standards known as the Waste Acceptance Criteria. These standards are governed by existing federal regulations to ensure that waste materials can be safely disposed of in the cell. Examples of materials that are excluded by Federal Regulation include (in addition to the materials noted above) liquids containing PCBs, lead acid batteries, used oils, refrigerants, and a number of other materials. These waste types, if generated or found during cleanup, will be disposed of off-site no matter which alternative is chosen, because regulations prescribe disposal in special repositories. DOE has reported that approximately 5% of waste generated may fall into this category. Additionally, the CAB reserves the right to identify other constraints that may be identified as detailed design of the cell proceeds, and the CAB feels cannot be adequately or safely stored on site.
- The location of the disposal cell must be subordinate to Adaptive Reuse of the site. The best real estate on the site should be designated for Adaptive Reuse, not waste disposal. Adaptive Reuse of the site includes re-industrialization as well as continuing the management of wildlife areas outside the existing PGDP boundary. The best sites for reindustrialization are 5A, 3A and 1.
- DOE should maximize potential land for reuse. Leaving burial grounds *in situ* has an associated stigma that perpetuates fear of the site, as well as an uncertain, unknown risk for potential additional contamination. Leaving current burial grounds untouched is a limiting factor in adaptive reuse of the site, especially considering the current number of limited access areas within radioactive boundaries located on the adjacent Wildlife Management Area.
- DOE should provide comparison data from other cleanup sites that demonstrate to the community that the PGDP cleanup will be at least as thorough, and the waste disposal methods at least as stringent as those at other sites currently being processed.
- The alternative selected should keep environmental contamination and waste footprint as small as possible.
- The large amount of clean landfill that will be required for the waste disposal cell offers an excellent opportunity for development of attractive and beneficial wildlife and recreation areas on sites adjacent to the PGDP.
- The final waste disposal decision must include incentives to reduce, recycle, and/or treat waste materials on-site to make them safer for disposal or potential reuse. If a waste that is hazardous because of pH, for example, can be neutralized to make the pH acceptable for non-hazardous disposal, then those treatment actions shall be encouraged. If metals can be treated to remove contaminants such that they can be reused, then those actions shall be encouraged.
- If a site other than Site 11 is chosen, then aesthetics become an important community value including the final land form (height, area and shape) and the arrangement of soil borrow pits (ponds, lakes, etc.). From an aesthetics perspective, Site 11 is the least obtrusive of the potential sites, while 3A, 5A and 1 are the most obtrusive.
- To support the community's future use vision, cleanup decisions should include anticipated improved roadways, infrastructure optimizations/ partnerships, and transferred land for both reindustrialization and recreational uses.

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### **Conclusion**

From the amount of detailed study that has been performed on various waste disposal options, it is obvious that there is no one solution that perfectly satisfies all of the conditions noted above. It is, however, clear that the least satisfactory approach is to do nothing. Allowing the site to remain in its present unstable state will only increase the hazards associated with the eventual cleanup. With this in mind, the Citizens Advisory Board submits the following:

### **Recommendation**

**Proceed as expeditiously as possible to obtain agreement between the regulatory agencies for approval of an on-site waste disposal cell meeting all CERCLA requirements at Site 11. Site 11 minimizes the impact of the CERCLA cell to the rest of the site and the surrounding area for potential reuse, as well as keeping all waste disposal facilities in one location. Should regulatory issues preclude the use of Site 11 for valid reasons that cannot be overcome by engineered solutions; the CAB will take Sites 5A and or 9 under consideration as an alternate. Under no circumstances will Sites 1 or 3A be considered acceptable.**

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